Maryland Working Lands Initiative:
A Delmarva Conservation Corridor Proposal

Executive Summary

Maryland's Eastern Shore has been at the forefront of the conservation movement since the 1970's when the region led the nation in adoption of conservation tillage. Since that time, with impetus and funding opportunities afforded by the Chesapeake Bay program, millions of private, state and federal dollars have been directed at protecting natural resources with best management practices.

Maryland's proposal takes advantage of the momentum that exists on the Eastern Shore to adopt BMPs and provide innovative means to protect lands of high conservation value. Additionally the protection of working lands through purchase of easements for development rights is an important component of the proposal. However, the basic underpinning of this proposal are actions and programs to support the economic viability of working lands over the long-term. Assuring the economic viability of working lands is essential for long term retention and protection of the area's natural resource base and lands of high conservation value.

To achieve these objectives a broad range of incentives, protection strategies, conservation measures and policy changes are incorporated into the proposal. They revolve around four basic concepts:

Land preservation
Natural resource protection and conservation
Risk reduction
Infrastructure support

Private landowners play a key role in assuring the conservation and protection of natural resources. Local food and fiber production are essential components of regional security and a healthy local environment. The proposal emphasizes incentives that need to be provided to private landowners for protecting and maintaining the public values derived from the natural resource base. Financial and technical assistance for implementing management practices to protect natural resources and enhance production efficiencies are included.

The component of this proposal piece that is often ignored because of its complexity is the need for infrastructure support and responsiveness. The most effective strategy to maintain and protect working lands over the long term is to assure their economic viability. Alternative markets, small business financing options and new production or technology options need to be available for farmers to remain profitable. Dependence on diminishing local market outlets and international competition cannot sustain local rural economies. The proposal includes strategies that will reduce producer risk and support development of new markets, products, and financial skills through funding alternatives.

I. Introduction

Maryland identifies the nine counties that make up its portion of the Delmarva Peninsula simply as the Eastern Shore. The area remains generally rural in character with agricultural land representing 45% of the land and resource based lands 92% of land use. This character is increasingly under pressure and the American Farmland Trust (AFT) identifies the Delmarva peninsula as the 9th most threatened farming region in the country. Maryland's agricultural industry on the peninsula contributes over $2.2 million to the economy.

The Eastern Shore is homogeneous in the dominance of the poultry and grain industries in the local and agricultural economies, continued importance of the forest industry and the natural resource base of wetlands and wildlife habitat these "working lands" support. However important physiographic and natural resource variations exist and a variety of economic development and natural resource protection strategies are needed to assure the long term viability of working lands and protection of lands of high conservation value.

II. Background /Context

Agriculture

The **poultry industry** dominates the agricultural and local economy in most of the region. Approximately 35% of Maryland's cash farm income was from broilers with a production value of $552,560,000 in 2001 and Maryland ranked 7th among all states in the number of broilers produced.

Poultry companies with growers or facilities in Maryland were nationally ranked in 2001 (based upon average live weight slaughter as published in WATT Poultry USA January 2002) as follows:

Tyson Foods, Inc.	#1
Perdue Farms Inc.	#5
Mountaire Farms Inc.	#10
Allen Family Foods, Inc.	#18

However the recent announcement that Tyson Foods, Inc would be closing its Maryland processing facility will result in a loss of 650 jobs at the plant and impacts 155 growers supplying 10% of Maryland's poultry. Although it is expected that most growers will successfully contract with one of the other three poultry integrators, market shifts represent a significant loss to the local economy where poultry accounts for over 80% of the local economy. Tyson's transition from poultry processing in Maryland highlights the tenuousness of a local agricultural industry dependent on limited markets.

In addition to being a driving economic engine, the poultry industry represents a significant challenge to effectively utilizing the waste generated. Maryland law requires farmers to begin implementing phosphorus based nutrient management plans in 2005 which will limit the land base available in some counties to utilize poultry litter as a nutrient source. Although Somerset and Wicomico counties trail the top poultry producing counties in the region-Sussex county, DE and Worcester county, MD- they have the greatest density of birds in the region, over 3400 birds produced for each acre of corn ground in the county (1997 census).

Maryland has already taken important steps to address this issue. Maryland producers have used the state cost share program, available since 1984, to finance animal waste storage and

poultry mortality composting. Maryland had approximately 850 poultry producers at the close of state fiscal year 2002. Since 1984 the Maryland Agricultural Water Quality Cost Share Program (MACS) provided up to 87.5% of the cost to construct 711 poultry mortality composters and provided $16.6 million to construct over 1150 poultry litter storage structures to improve litter management from poultry operations. Maryland has also implemented a Manure Transport Program since 1999 to fund the transport of excess poultry litter to other counties or regions where it can be more effectively utilized as a nutrient input. The poultry companies match 50% of the cost share spent for manure transport and over 100,000 tons of poultry litter has been relocated for land application in other regions in accordance with a nutrient management plan or for alternative uses. Additionally the development of a recycling facility by Perdue Agri-cycle has been successful in utilizing approximately 60,000 tons of poultry litter from the Delmarva peninsula annually since its start up in 2000.

The viability of the agricultural industry on the Delmarva is closely linked with the poultry industry and this proposal addresses outstanding issues that challenge poultry growers and will enhance water quality protection and resource conservation on these farms.

Farmers in Maryland are required by state law to implement nutrient management plans and will have to address phosphorus issues beginning in July, 2005. This may be a concern to animal operations who have used poultry litter as a nutrient source and may have high phosphorus levels on their crop land. The resulting issues are management of excess poultry litter that cannot be applied to cropland and effectively addressing nitrogen needs for fields where manure application is limited by phosphorus levels.

The first issue is being addressed with the Manure Transport Program and the creation of alternative use industries such as Perdue-Agr-Cycle. Additional support could come from a waste to energy facility. An Animal Waste Technology Fund was established in 1998 and provided over $3 million in its three years of availability. It funded several alternative use ventures including a feasibility study for energy production from poultry litter. Future funding requests may include assistance for this type of endeavor at a regional scale.

As farmers implement nutrient management plans and must be more precise in calibrating poultry litter application to assure phosphorus limitations are not exceeded, there will be a need to better gauge nitrogen needs of the crop. One method will be to improve technologies so fertilizer applications can balance litter use. We propose to develop and field test real time nitrogen sensors and variable rate applicators for corn and wheat on Delmarva . **We request $1 million over 5 years to develop prototype equipment, conduct research on 10 farms on Delmarva using test plots for calibration and initiate technology transfer of results** . *(see page 29)*

There is also a need to better understand and address potential air quality issues that arise from poultry production. Approximately 70% of poultry houses use tunnel ventilation to protect animal health from ammonia build up . There is concern that ammonia emissions, especially from animal agriculture, contribute to both air and water quality concerns locally and in the region. Preliminary research findings from the University of Delaware (Dr. Bud Malone) show that planting tree buffers can reduce ammonia emissions. Additional benefits result from reduction of odors and particulates and improvements for the "view-shed" of neighbors. It is increasingly important for the poultry industry to co-exist with residential neighbors. EQIP presently offers cost share for installation of these tree buffers or shelterbelts. Widespread adoption of this practice will require a focused outreach and technical assistance effort**. We**

request $65,000 to hire dedicated staff to work in all three states through flock managers to promote the practice and provide technical assistance for its implementation. *(See page 24)*

Most of the **grain** grown on Delmarva is used for poultry feed and producers can command premium prices for its quality and proximity to the poultry feed mills. The chart below emphasizes the interdependence of grain and poultry production on the peninsula:

Year	Millions of Broilers Grown	Soybeans Used for Broilers	Delmarva Soybeans Grown	Corn Used for Broilers	Delmarva Corn Grown
1970	330	10.2	8.8	33.7	41.7
1975	326	12.0	15.7	31.8	47.0
1980	418	15.1	15.0	41.6	40.2
1985	497	19.6	20.0	52.8	60.1
1990	517.3	19.0	23.3	58.3	49.7
1995	623	28.0	14.4	72.1	39.9
2000	599	28.4	28.2	69.7	67.6
2001	587	25.0	25.5	73.0	65.6

Maryland's share of grain production on the Delmarva peninsula in 2001-02 was: corn-260,600 acres soybeans -382,000 wheat- 129,000 barley-29,200

The region's long-term economic viability would be strengthened by establishment of new markets for grains and other commodities. Creation of value added products or energy generation from grains offer promising opportunities to area farmers who have knowledge, experience and existing equipment investments to grow them.

Chesapeake Fields Institute (CFI) was established to strengthen the profitability of traditional agricultural markets for family farms, while conserving the region's natural and cultural resources. This collaboration of area family farmers, community, government, business leaders, and institutions of higher education throughout the Delmarva Peninsula plans to develop community-based food systems enterprises that are locally-owned and operated using environmentally sound practices.

After conducting crop variety research, feasibility studies and market research, CFI's initial for-profit ventures will be oil seed cleaning and crushing, oil seed snack foods and an artisan bakery to anchor its agriculture business park. All grains used will be identity preserved (IP) which is thought to be one key to CFI's future success. IP means growers will plant, harvest and process crops keeping them segregated at all times; all inputs will be recorded and printed on the CFI label that will accompany the product to the consumer/customer. It is anticipated that on farm storage would be necessitated to assure identity preserved products and improve marketing flexibility**. As part of a broader request for loan and grant programs, we are requesting $175,000 annually to provide 87.5% cost share to support 20 farm storage facilities each year.** *(see page 35)*

Launching a value added enterprise requires financing for market research, feasibility studies, business formation, accounting formation and an equity drive. Additional incentives in the form of subsidized interest can assist farmers to buy into value added start ups.

We request $5 million in grant and loan funding to be used throughout Delmarva annually to support product and market research and start up for value added ventures,

establishment of cooperatives to gain market share or efficiencies, market research into alternative crops, introduction of innovations to diversify the agricultural and forestry sectors and small grants, no and low interest loans for agricultural producers. *(See page 33)*

Maryland has provided cost share to farmers who plant small grains in the fall as cover crops for the purpose of tying up unutilized nutrients during the winter months. This BMP has been highlighted as an important water quality strategy for its nutrient uptake and cost effectiveness. Farmers must adhere to planting date deadlines and cannot use fertilizer. This program has proven one of the most cost effective conservation measures in reducing agricultural NPS inputs to water resources. At present cost share is available to animal producers under EQIP with a number of restrictions. **We propose $4 million in additional funding annually eligible to all producers on the Eastern shore to plant fall cover crops.** *(See page 27)*

During two recent drought years, Maryland enhanced the cover crop program to allow harvest in the spring provided the crop did not receive fertilizer prior to March. Since income can be earned from harvest, reduced cost share is provided for planting cover crops with the harvest allowance**.** It has multiple benefits for the region including tying up unused nitrogen in order to protect water quality, promoting innovative nutrient management techniques by elimination of fall fertilization and developing producer interest and experience growing barley for an energy production facility. **We request $ 2 million the first year to expand this program.** *(See page 25)*

The Maryland Grain Producers in cooperation with Maryland Farm Bureau, Maryland Crop Improvement Association, Maryland Farm Credit and the Maryland Agro-Ecology Center have conducted a feasibility study to explore ethanol production utilizing barley. In addition to producing a renewable energy source in the Mid-Atlantic region, their main objective is to provide an alternative market for small grains and allow growers the opportunity to produce a small grain with the added environmental benefit achieved by a fall cover crop. Current research indicates the best option to be hull-less barley, which produces greater energy return and a protein by-product that may be marketable as a poultry feed. It is projected that 150,000 acres of barley which would have the potential to tie up 3.75 million pounds of nitrogen will be required to run a 15 million gallon plant. **We request $12 million in start up funding to establish this Mid-Atlantic Ethanol facility.** *(See page 36)*

The nursery industry is the second largest agricultural economic earner in Maryland. Industry sales on the Eastern Shore, which include both plant wholesale and retail sales and landscape businesses, were over $75 million in 2000. Although small in production area - 4342 acres were planted to horticultural products and 286,204 square feet of covered (greenhouse) production was utilized in 2000, plant sales represent 80% of the industry on the shore. This is an expanding industry and Bell Nurseries has developed a franchise business which supplies growers with seedlings and pays them to grow out product for market.

Although vegetable production represents a small portion of the local economy and only encompasses 25,500 acres (harvested 2001-02) , this sector has been identified as having a significant market potential because of the proximity of Delmarva to population centers. Currently 14,200 acres of vegetables in Maryland are harvested for fresh market and 11,200 acres go to processing plants.

Additional efforts need to be established to attract processors to the region. In addition to financial counseling, **we propose to establish/improve coordination of economic development assistance through a Working Lands Foundation.** *(See page 37)* This entity would assist and

help find financial support for farmers and foresters interested in pursuing new business ventures, develop value added enterprises, alternative crops and product development, and assist in the formation of agricultural and natural resource based cooperatives.

There are 13 active Farmers Markets operating in Maryland's Delmarva counties. Direct sales to the public at these weekly or bi-weekly markets are restricted to locally grown products. Additional direct marketing activities will be supported through financial assistance and financial counseling components of this proposal.

Financial counseling assistance is proposed for agricultural producers and forest landowners to diversify their operations, take advantage of new or expanding market opportunities, and conduct general estate planning. *(See page 33)*

As Delmarva farmers develop more diverse operations, crop insurance products need to be crafted to address risk. Although diversification reduces overall risk to farm revenue stream, insurance products presently available emphasis single commodity production enterprises. The Conservation Corridor project will increase opportunities for diversifying enterprises. These ventures may involve production of different varieties of grains, production of entirely new products or reformulation of products and by-products from the operation. In addition to costs associated with start up, there will be increased risks especially in the early stages of adopting new crops or agricultural production ventures. New insurance products will be necessary to address newly assumed risk **We are requesting additional research be conducted to enhance an adjusted gross revenue product for whole farm coverage.** *(See page 25)* Increasing coverage to 95% of revenue and improving return rates once the compensation trigger is reached are two areas that need to be addressed.

Forestry

Maryland has approximately 800,000 acres of forest land on the Delmarva Peninsula with a projected economic value of $350,000,000. State owned forest land on the Delmarva Peninsula includes :

Chesapeake Forest-58,172 acres
Elk Neck State Forest-3377 acres
Pocomoke Forest 17,285 acres
Seth Demonstration Forest 125 acres
Wicomico Demonstration Forest-1215 acres

Maryland passed a Forest Conservation Act in 1991 which requires development activities that permanently impact forest cover to mitigate for losses on no less than an acre for acre basis. This program has resulted in the permanent protection of approximately 95% of the 6000 acres of forest land that were established as mitigation for impacts.

Maryland Forest Service has annually averaged approximately 150 Forest Stewardship Plans on 6000-10,000 acres. In addition Forest Service staff annually assist landowners with 3000-5000 acres of reforestation, 2000-4000 acres of Timber Stand Improvement and over 100 miles of riparian forest buffer establishment. **We are requesting $120,000 for 2 FTE to accelerate assistance to forest landowners.** *(See page 30)* We project this will double timber stand improvement acreage and increase reforestation by 500 acres. Currently EQIP funds forestry practices such as afforestation, reforestation, site preparation and thinning . These practices provide environmental benefits, enhance habitat and support income earning potential within the forestry industry.

Maryland has established three Forest Legacy Areas on the Eastern Shore-Elk Neck, Wye River and Chincoteague Bay. **As part of the Conservation Corridor Program we are requesting $1 million to purchase easements on forest land in these areas. Maryland and Delaware will coordinate an evaluation of forest resources on the peninsula to propose new Forest Legacy areas. We request an annual earmark of $1 million for purchase of easements in Forest Legacy Areas on the Delmarva Peninsula.** *(See page 21)*

Maryland Forest Service has staff to address whole Forest Products Utilization and Marketing Program. Assistance is provided to primary manufacturing, loggers, and sawmill owners to improve profit and expand markets. One of the efforts will be to assist secondary industries or "value-added" ventures. **We are requesting funding to help support grants and loans to businesses for feasibility studies, market research, new ventures, alternative technology development and support of cooperatives that will further promote these efforts.** **(***See page 33)*

ources

Maryland's Eastern Shore has seventy five percent of the state's estuarine wetland acreage, and ninety percent of the state's tidal wetlands. The Chester and Elk basins contain mostly freshwater marshes and some brackish high marsh. To the south the Choptank has mostly brackish high marsh and submerged aquatic wetlands. The Nanticoke and Pocomoke rivers have extensive brackish high and low marshes and submerged aquatic wetlands. Bald Cypress and Atlantic White Cedar and other wetland species are found on the Eastern Shore. Wetlands are highly productive ecosystems that protect the water quality of the bay and provide shelter for the young of crabs and many fish species.

Delmarva Bays are designated as "Wetlands of Special State Concern" in Maryland and afforded additional protection under the State Wetlands Protection law. They are seasonally flooded depressions containing species not found elsewhere. They range in size from less than one acre to many acres, and usually dry up for a period each year. The lack of predatory fish allows the survival of sensitive amphibians. Nesting waterfowl also use these areas.

Approximately 16% of the land area of the Eastern Shore is wetlands. Maryland has had a wetlands protection law since 1990 that prevents the conversion of existing wetlands. Historic loss of wetlands on Maryland's Eastern Shore is estimated at 45% . The CREP and WRP have been successful in providing incentives for the enhancement, restoration and creation of wetlands. Between 1998 and 2001 over 6000 acres of wetlands were restored or created. Maryland is developing a separate CREP request to extend the program and it will continue to make wetland enhancement and restoration options available to interested landowners. This program is not competitive but requires cropping history for eligibility. Although funding is competitive, WRP offers additional opportunities to landowners who may not have eligible cropping history or would like to protect wetlands under different easement options. We project the demand for Maryland's Wetland Reserve Program funding to exceed present allocation. **We request an additional $300,000 for Wetland Reserve Program annually.** *(See page 22)*

Maryland's Eastern Shore has seventy four percent of the state's wildlife management area (WMA) acreage. Nineteen WMAs provide a permanent natural environment for plants and animals that could otherwise disappear due to habitat loss. Cedar Island has a growing population of black ducks which used to be on the decline. Maryland's only breeding population of black-necked stilts makes its home at the Deal Island WMA. Some of the WMAs are former game

farms. The results of experiments with plantings for wildlife created an ideal mix of open pasture and woods that allowed the endangered Delmarva fox squirrels to make a comeback. Several areas were chosen for the release of wild turkeys which had disappeared from the Delmarva 200 years ago. Some species require large areas of uninterrupted forest. Adjacent to Blackwater National Wildlife Refuge, Fishing Bay WMA contributes to one of the largest parcels of land set aside for wildlife in Maryland.

The occurrence of Phragmites in disturbed areas has allowed it to spread and replace natural salt marsh communities. Although Phragmites provides minimal benefit to stabilize shoreline, it degrades habitat value for food and cover. It is estimated that over 100,000 acres of Phragmites, approximately 70% of the statewide total, is on the Delmarva Peninsula. **We request a $100,000 increase in WHIP funding to be used for Phragmites control.** *(See page 30)*

Game species proliferate on the Eastern Shore providing opportunities for hunting, trapping, fishing, crabbing. Some areas offer a hunting area designated for those who are physically challenged. Others have areas or seasons designated for muzzel loaders and bow hunting. The economy of the Eastern shore benefits from hunters using the natural areas including: Wildlife Management Areas, Cooperative Wildlife Management Areas , Natural Environmental Areas, and Natural Resources Management Areas. Natural areas benefit from the hunters reducing certain rapidly expanding populations such as deer.

Maryland has initiated a GreenPrint Program to provide a consistent approach to evaluating land conservation and restoration efforts in Maryland. This program targets protection through easement purchase to lands identified as having the greatest statewide ecological importance. It uses a computer tool known as the Green Infrastructure Assessment (GIA) which recognizes: (1) areas with a variety of natural resource values (as opposed to a single species of wildlife), (2) how a given place fits into a larger system, (3) the ecological importance of open space in rural and developed areas (4) the importance of coordinating local, state and even interstate planning, and (5) the need for a regional or landscape-level view for wildlife conservation.

The GIA resulted in mapping two types of important resource lands - "green hubs" and "green links." Green Hubs are typically large (the average size is approximately 2200 acres) contiguous areas that contain large blocks of contiguous interior forest, large wetland complexes of at least 250 acres, important animal and plant habitats of at least 100 acres, relatively pristine stream and river segments and existing protected natural resource lands which contain one or more of the above. Green Links are linear features connecting green hubs together to help animals and plant seeds to move between green hubs. Generally speaking, green links connect green hubs of similar type (green hubs containing forests are connected to one another; while those consisting primarily of wetlands are connected to others containing wetlands).

<u>Wildlife Management Areas</u>:
Cedar Is, Deal Is, E.A.Vaughn, Ellis Bay, Fairmont, Fishing Bay, Idylewild, Isle of Wight, Johnson, LeCompte, Linkwood, MD Marine Properties, Millington, Nanticoke, Pocomoke, Sinepuxent, South Marsh Island, Taylors Island, Wellington

<u>Natural Heritage Areas</u>:
Endangered & Threatened Plants and Animals listed by County (website)
Wetlands of Special State Concern: map

Fishing Bay, Nanticoke River, Marshyhope Creek and Lower Pocomoke w/s

State Parks:

Assateague, Pocomoke River SP, Somers Cove SP, Martinek SP, Tuckahoe SP, Janes Island SP, Choptank River Fishing Pier, Wye Oak SP, Wye Island NRMA, Wye Oak SP

Strategies Supporting Conservation Corridor Objectives

Land Preservation

At present approximateluy143,100 agricultural acres are protected by easement on Maryland's Eastern Shore. These lands were protected through local, state and federal programs as well as nonprofit and private land trusts and represent less than 20% of the agricultural land base in use at present. Although the protection of working lands through purchase of easements for development rights is an important component of the proposal, it is recognized that sufficient resources can never be marshaled for easement purchase to assure that an adequate base of active working land remains over the long-term. Therefore we also request support directed to activities that support and foster ongoing profitability of working lands. Land protection strategies among Eastern Shore counties widely varies. Agricultural land in easements ranges from 3,000 acres in Somerset county to 64,000 in Dorchester county.

Maryland initiated an easement program under the auspices of the Maryland Agricultural Land Protection Foundation (MALPF) in 1977. The nine counties of Maryland's Eastern Shore (Caroline, Cecil, Dorchester, Kent, Queen Anne's, Somerset, Talbot, Wicomico, and Worcester) cumulatively contain 93,232 acres of MALPF-protected farmland, about 40% of the total land MALPF has preserved in Maryland. In the last five years (FY 1998-2002), MALPF and its county partners have spent over $43,000,000 to acquire eighty easements comprising 10,834 acres on the Eastern Shore.

Despite this enormous effort, supplemented and reinforced by other State and local land preservation efforts, MALPF is only able to fund a minority of the easements offered for sale by landowners. In FY 2002, $13,040,700, a record amount of funds was spent to purchase easements in Eastern Shore counties. However this funded less than half the easements applications submitted from landowners in Eastern Shore counties.

The Maryland Agricultural Land Preservation Foundation (MALPF) proposes a land preservation initiative within the Conservation Corridor legislation to preserve 50-80,000 acres over a five-year period on Maryland's Eastern Shore. **We request $50 million in year 1 in easement funding with $120,000,000 over 5 years** *(See page 16),* based on the estimated funding shortfall and current level of demand.

With the additional demand on the Foundation's administrative resources, we request support for 1 FTE position in MALPF to process Conservation Corridor funded easements. The Foundation has processed $20 to $36 million in easements annually over the last five years with 3 administrative and 1-2 support positions**. Projected workload from our request requires 1 administrative FTE for five years at an estimated cost of $65,000 per year.** *(See page 17)*

The Rural Legacy Program was created by the Maryland General Assembly in 1998 as a land conservation tool to reverse the trend to convert agricultural and natural resource lands and open space to sprawl development. Funds are awarded to conserve land within designated Rural

Legacy Areas. Rural Legacy Areas are selected based on a range of statutory criteria that includes the significance of resources and extent of resource-based industries to land use planning and level of funding match to support protection of the area. The Rural Legacy Program (RLP) is intended to protect natural resources, farms, forests, and other sensitive environmental areas through conservation easements. Its goal is to identify and protect areas that are rich in agricultural, natural, and cultural resources, which if protected, will help promote local resource based economics, protect greenbelts and greenways, promote the proper management of tillable and wooded areas, and maintain the fabric of rural life. It particularly focuses on creating large blocks of contiguous protected land. The program provides funds to local governments and land trusts to purchase easements and fee simple property

There are seven Rural Legacy Areas on the Eastern Shore comprising over 110,000 acres. (To date over 17,000 acres have been protected through the Rural Legacy Program and a total of over 45,000 acres by all available protection programs. 2004 requests for easement funding is close to $23 million. **We request $15 million to fully fund easements offered for purchase in the Rural Legacy Areas on the Eastern Shore.** *(See page 19)*

Created in May, 2002, the GreenPrint Program is designed to protect lands critical to long-term ecological health. GreenPrint supports efforts to steer growth to designated growth areas while preserving more environmentally-sensitive areas. These lands, referred to as Maryland's "green infrastructure," provide the natural foundation needed to support a diverse plant and animal population and enable natural processes such as filtering water and cleaning the air to occur. MALPF receives 25% of the funds allocated for this program to purchase easements to protect farms that contain green infrastructure lands in MALPF-approved agricultural districts. In 2004, MALPF will receive $750,000 in GreenPrint funding.

MALPF proposes to integrate statewide and county ranking systems into its database and its GIS mapping capabilities. **$50,000 is requested to develop a pilot project to simplify and automate the prioritization process for the Eastern Shore counties.** *(See page 19)*
Easements offered for sale will be reviewed based on identified ranking characteristics by a customized computer program within a GIS. This capability will simplify the prioritization process, act as a check on county ranking, identify the properties of most interest to MALPF and track how well priority properties are being protected.

Maryland presently dedicates funding for purchase of development rights on agricultural land through a land conversion tax. **We will initiate an effort increase this tax in Conservation Corridor counties and target its use for easement purchase in the Conservation Corridor.** *(See page 23)* If successful, funding will be used to match federal funds in future project years.

Effective right to farm laws are necessary to reduce the risk of agricultural enterprises and attract value added, processing and support industries to the region to assure the economic viability of the industry. **We will evaluate tools currently in use throughout the country and promote adoption of a model law for Delmarva Conservation Corridor counties in Maryland.** *(See page 23)*

Maryland Agricultural Water Quality Cost Share Program (MACS)

Maryland has provided up to 87.5% of the cost of installing best management practices on agricultural land for the purpose of preventing or correcting water quality problems. The per practice limit is $10,000 with an allowable limit of $75,000 for animal waste management systems. Per farm limits with animal waste management systems is $100,000 and without is

$45,000. At present 30 practices are eligible. Since its inception in 1983, this program has been used in conjunction with USDA cost share programs. The current funding level is $7 million. MACS achieved a record performance in 2002, providing $10.7 million in grant payment to install 3400 projects on Maryland farms preventing soil erosion, controlling nutrient runoff and safeguarding water quality in local streams, rivers and the Chesapeake Bay. This includes $2.9 million provided for 80 animal waste storage structures. Maryland will use funds spent for BMPs on the Eastern Shore to match federal funds allocated to the Conservation Corridor.

Chesapeake Bay Program and Tributary Strategies

Since 1985 Maryland counties in the region have been engaged in efforts to improve the water quality and enhance the natural resources of local tributaries and the Chesapeake Bay. There have been several iterations of priority watersheds for accelerated implementation of agricultural best management practices.

Farmers in these counties lead the state in development and implementation of nutrient management plans under both the voluntary and regulatory programs. Current participation ranges from 75% to close to 98%. Implementation of the menu of BMPs highlighted in the tributary strategies developed to reduce nutrients to the Bay resulted in a range of nitrogen loads reductions from 29% of from in the Upper Shore to 42% in the Choptank watershed and a range of phosphorus load reductions from 35% in the Upper Shore watersheds to 59% in the Lower Shore watersheds.

Reauthorization of the Chesapeake Bay Agreement in 2000 emphasizes the need to develop additional management measures to address NPS sources and to accelerate and enhance the activities that are known to be effective in order to meet the agreement's ambitious goals. We anticipate that as we implement the Conservation Corridor program we will have the opportunity to demonstrate new technologies or innovative conservation measures. Future requests will further address these needs.

Water management BMPs have not previously emphasized the resource conservation benefits that can be realized through their application. Two areas are the subject of this proposal-existing irrigation and drainage systems. Irrigation is an important tool for reducing risk and assuring the proper utilization of nutrients. **We propose additional programs that would emphasize water conservation measures for existing irrigation systems**. *(See page26)* The network of drainage systems on the Eastern Shore acts as a direct conduit from land management practices and runoff to delivery to the Bay. A number of measures can be utilized to interrupt, slow or manage drainage, in order to reduce nutrient impacts to water quality and to provide or enhance habitat. **Funding is requested to support implementation of these water management best management practices for existing drainage systems**. *(See page26)*

Precision agriculture is a system for more accurately gaging nutrient application to differences in soils and their yield capacities across fields or management units. Although presently EQIP provides incentives to promote grid sampling and use of yield monitoring, we propose two avenues for broadening use. Maryland presently has available a linked deposit program through the State Revolving Loan Program which supports certain NPS management activities. **Maryland will work to make additional equipment needs for precision agriculture eligible for reduced cost loan support through this program.** *(See page 29)* Additional nutrient management benefits can be derived from improvements to automated side dress

technologies. **We request funds to develop a prototype and run test plots on Delmarva to calibrate it for use the region**. *(See page 29)*

The Chesapeake Bay Program demonstrates the cost efficiencies that can be realized by implementation of agricultural BMPs which often provide a more cost effective strategy for the amount of nutrient reduction they attain. However the program needs to balance the equity of asking farmers to shoulder a greater proportion of the cost for attaining its goals. Working landscapes also provide additional values that are presently not credited in economic systems. These include natural resource benefits such as groundwater recharge, carbon sequestration, and wetland protection. **Regionally a system of valuation for these benefits will be developed and piloted under Conservation Security Program funding.** *(See page22)*

In addition to water quality objectives, the Chesapeake Bay Program includes a wide array of habitat and living resources goals. One issue receiving increased scrutiny is the advance of invasive plants and exotic species and their impacts to native habitats. These invasives often can have an economic or management impact for agricultural endeavors. **We request $100,000 to enhance and utilize the Wildlife Habitat Incentive Program (WHIP) to address the control of invasives with specific targeting to Phragmites control.** *(See page30)*

Evaluation of land management alternatives and implementation of best management practices requires an adequate level of technical assistance. Although Maryland has significantly increased staff resources during the last 15 years, efforts have been eroded by hiring freezes caused in response to declining revenues**. Maryland requests contributory agreements be developed which will allow full staffing of local soil conservation district and forestry offices.** *(See page 30)*

Conservation Reserve Enhancement Program

Maryland was the first state to formulate a CREP. The two main objectives were to enhance opportunities for achieving water quality and habitat benefits and provide compensation commensurate with the costs and markets prevalent in Maryland. The program emphasized riparian vegetated buffers, wetlands and highly erodible land. To date approximately 65,000 acres
have been enrolled in the program. The Maryland CREP has been extended to allow time for development of a state-federal agreement for a new program. Our intent is to achieve riparian buffer and wetland enhancement goals for the Eastern Shore within this CREP.

Coastal Bays Program

Maryland's Coastal Bays program was initiated in 1996 under the National Estuaries Program. The Management Plan is presently in its fourth year of implementation and highlights the high conservation value of land in this watershed. In addition to natural resource management and protection goals, the program places emphasis on land use considerations.

One program that has resulted is Delmarva Low Impact Tourism Experiences or DLITE, an alliance of local, state, and federal agencies along with local tourism providers and natural resource managers formed to encourage nature-based tourism and promote an interest and value for the natural world. The alliance includes the Rural Development Center-UMES, County Tourism Offices in Somerset, Wicomico, Worcester counties in Maryland and Sussex county in Delaware, the National Park Service, The Nature Conservancy and the Chincoteague Tourism

office. They presently have a $150,000 grant to pursue Cape to Cape Birding, Delmarva Biking Trail, Kayak Trails, Hotel and Business Training, Package Weekend Tours and an "ask the expert" series. We propose to build on this effort for creating a demand and new revenue opportunities from natural resource protection.

Chesapeake and Atlantic Coastal Bays Critical Area Program-

Maryland has implemented a program to limit develop and protect natural resources within 1000 feet of all tidal waters and wetlands since 1986. All nine Maryland Delmarva counties have ordinances implementing this program. In 2002 the Atlantic Coastal Bays watershed was incorporated into the program expanding it peninsula-wide in Maryland. The program restricts land use and development densities within 1000 feet of tidal waters and wetlands. Agricultural and forestry activities must implement land use management plans protective of natural resources in this 1000 foot swath. In 2001 over 384,000 acres of Critical Area agricultural land were managed on the Eastern Shore in accordance with soil conservation and water quality plans. Typically the plans encompass entire farms and are not restricted to the 1000 feet requirement.

Eastern Shore 2010

This regional agreement developed under the auspices of the Eastern Shore Land Conservancy commits local governments to the protection of the Maryland Eastern Shore landscape and its natural resources. Six counties have agreed to work cooperatively toward four (4) important goals:

1. Strive to protect from development through the use of voluntary preservation programs 50% of Eastern Shore land outside of locally-designated growth areas by 2010.
2. Recognize our resource-based economy as a key part of the Eastern Shore heritage and future by integrating agriculture, fisheries, and forestry into each county's economic development plan by 2005.
3. Work with existing communities to guide at least 50% of new annual development into locally-designated growth areas by 2005.
4. Develop a regional transportation plan that integrates the use of public transportation and alternative modes of transport within and among communities by 2010.

Local rural economies are challenged to meet the expected nutrient reduction standards necessary to achieve Chesapeake Bay water quality goals. Additionally, revitalization of these community centers and expansion of infrastructure are necessary to direct growth and foster a resource based economy. **We are requesting $23 million for the implementation of BNR technology in 8 Delmarva communities in Maryland** . *(See page 31)*

III. Public Process

Maryland conducted three community forums in November 2002 and invited the public to provide input into establishing the objectives and content of Maryland's Conservation Corridor proposal. 70-85 people attended each session. After a brief explanation of the enabling legislation, facilitated break out sessions were used to provide input using the following questions:

1. If you had the power to decide, what would be the future of natural resources, working landscapes, and the economy on the Delmarva Peninsula?
2. What suggestions do you have for determining land with high conservation value?
3. What Additional Criteria should be considered? For example: Do you suggest targeting programs to certain groups or areas or available Delmarva wide?
4. Which types of specific programs are most important for including in the corridor proposal?

The consistent theme that occurred related to a general opposition to strategies that involved targeting including use of the definition of land with high conservation value so as to exclude or target specific lands.

The list of ideas generated from these community forum was used as a point of departure for the Steering Committee that was formed by the Maryland Secretary of Agriculture.

An executive summary with highlights of the final proposal will be provided to all participants at the Community Forums who provided contact information. Additionally information will be published in the *Delmarva Farmer,* a weekly newspaper covering activities on the peninsula.

IV. Proposal detail

Land Protection Strategies

1. a. MALPF Easement Purchase

The Maryland Agricultural Land Preservation Foundation (MALPF) proposes a land preservation initiative within the Conservation Corridor legislation to preserve 50-80,000 acres over a five-year period on Maryland's Eastern Shore. We request $120,000,000 in easement funding based on the estimated funding shortfall between the value of easements offered for sale on Eastern Shore and the limited funding available to MALPF to purchase those easements. With current state funding and this supplemental Conservation Corridor funding, MALPF can double its 93,000 acres of preserved land on the Eastern Shore within five years.

Year One:

Easement Purchases	$50,000,000
Staff Support: Easement Processing	$65,000
Technical Support: Implement Automated Ranking System	$50,000
Technical Support: Installment Purchase Agreement Plan	$50,000
TOTAL YR 1 REQUEST	**$50,165,000**

Funds granted to MALPF to purchase conservation easements under USDA's Conservation Corridor Initiative will be disbursed using the easement prioritization and acquisition processes determined by statute and in cooperation with its county partners on the Eastern Shore.

The nine counties of Maryland's Eastern Shore (Caroline, Cecil, Dorchester, Kent, Queen Anne's, Somerset, Talbot, Wicomico, and Worcester) cumulatively contain 93,232 acres of MALPF-protected farmland, about 40% of the total land MALPF has preserved in Maryland. In the last five years (FY 1998-2002), MALPF and its county partners have spent over $43,000,000 to acquire eighty easements comprising 10,834 acres.

Despite this enormous effort which has been supplemented by other State and local land preservation efforts, MALPF is only able to fund a minority of the easements offered for sale by landowners. In FY 2002, a record amount of funds was spent to purchase easements in Eastern Shore counties however only 46% of the 214 applications to sell easements received by Eastern Shore landowners were funded. On average, only between a quarter to a third of the applications received by the Foundation are funded.

The gap between the price asked by landowners for their easements and the funds available to the Foundation to purchase easements has almost doubled in the last year. The Eastern Shore overall does well in statewide competition based on the willingness of landowners to discount easement prices and purchases of MALPF/GreenPrint easements in the last two years have been concentrated on Eastern Shore. However because of the State budget issues, MALPF funding for FY 2003 and 2004 has been cut in half and GreenPrint funding apportioned to MALPF has declined from over $7,000,000 in FY 2002 to $750,000 in FY 2004.

The first year's funding request is for $50,000,000 to clear out the backlog of demand for easements and purchase as many easements as are available at the beginning of a five-year easement purchase plan. The backlog of demand for the Eastern Shore is now $45,000,000. This will expand in the next two years due to State budget reductions. As the number of reapplications decline, the funding request will be reduced to $20,000,000 for the second and third years, and to $15,000,000 per year for the last two years of a five-year easement purchase plan. This amount

will supplement the existing commitments of the State and Eastern Shore counties to the MALPF program.

Current Funding Sources and Levels

MALPF's state funding comes from the State Transfer Tax, a tax assessed on all real estate property transfers. The Foundation receives 14.5% of the State Transfer Tax remaining after certain funds are set aside by the State for long term obligations and allocations. The Foundation receives additional State Transfer Tax revenue from the creation and funding of the Rural Legacy Program.

The Agricultural Transfer Tax is collected when farmland is sold and converted to another land use. The Foundation receives two-thirds of the amount of Agricultural Transfer Tax collected by each county, while one-third is retained by the local jurisdiction for agricultural land preservation purposes. A county with a local agricultural land preservation program certified by the Foundation and the Maryland Department of Planning may retain 75% of the Agricultural Transfer Tax collected for local farmland preservation purposes.

Many counties provide varying amounts of local matching funds to help acquire easements. Most of these funds are derived from the individual county's share of the agricultural transfer tax, but some add other county funds. The total county commitment is used to make easement offers to landowners within that county on a 40% county and 60% State matching fund basis.

In recent years, the Foundation has received funds from the Federal Farmland Protection Program (FPP) administered by the United States Department of Agriculture and from the GreenPrint Program administered by the Maryland Department of Natural Resources. FPP funds have been used to match state and county funds for up to 50% of the easement purchase on farms selected by the Farmland Protection Program as being of unusual quality. In FY2003, Maryland received $2,545,400 from FPP and the Foundation received $1,870,000 of that amount. Since 2001, $1.75 million in FPP funding protected of 539 acres through easement on the Eastern Shore. In FY 2004, FPP appropriated $3,900,000 for Maryland. The allocation is pending.

b. Staffing

With the additional demand on the Foundation's resources to process additional offers for easements, MALPF requests funds to add one position to its office specifically to process Conservation Corridor funded easements. The Foundation has processed $20 to $36 million in easements annually over the last five years with an administrative staff of three and one or two support staff. Since the present request would double program activity, we are requesting additional staffing equivalent to 1FTE for an estimated annual cost of $65,000.

c. Installment Purchase Agreement Pilot Project

An issue that has become increasingly important in attracting landowners is the taxation of developments rights payments as a capital gain. MALPF currently has two payment plans available to easement sellers: the lump-sum payment and the installment payments. Lump-sum payments are most advantageous to young farmers with a high basis and a large debt load. Capital gains on the lump-sum payment may be offset by the high basis, little depreciation exists for income tax purposes, and the payment can be applied to the debt on the land.

The installment payments option lets the landowner choose to receive payment for the purchase of the easement in separate equal payments from two to ten years. The landowner also

receives interest taxable as ordinary income. Spreading the payments out over several years can help the landowner reduce taxes owed, especially if the taxpayer has losses to carry forward. Installments can also be attractive to landowners who wish a predictable stream of income over some period of time, such as for retirement.

A refinement of the installment payments option is the securitized installment purchase agreement option which effectively turns an easement contract into a municipal bond. The landowner receives tax-exempt interest payments each year over the life of the contract, and at the end of the contract the principal amount is paid to the landowner. In the process, the landowner defers capital gains taxes on the easement sale price until the principal is paid. The landowner can sell the contract at any time on the municipal bond market. If sold before the contract expires, capital gains taxes become due.

This payments option is attractive to landowners who: (1) have little basis in their property and would otherwise pay up to one-third of the easement price in capital gains taxes; (2) have been offered a large payment for the development rights; (3) wish to set up a retirement stream of income; and (4) would rather preserve their land than sell it for development. This payments option can also be attractive to the State because it can leverage a smaller amount of funds into relatively larger easement purchases by allowing the State to fund the obligation through the purchase of zero-coupon Treasury bonds.

MALPF offers lump-sum payments and installment payments options, but does not yet offer the securitized installment purchase agreement option. While it has been under discussion periodically as a desirable alternative for landowners with potential capital gains issues, the attempt to create this payments option by statute during the 2003 legislative failed because of its legal and conceptual complexities.

MALPF proposes to develop a pilot project with Conservation Corridor funding to offer a securitized installment purchase agreement option to participants on Eastern Shore to make the preservation of farmland in the Corridor more attractive for those landowners who have concerns with capital gains taxes accruing from the sale of a property's easement to MALPF. The intent is to allocate not more than 20% of the funding received for agricultural land easement purchase using this purchase vehicle.

The principal expense in developing such a pilot project is the specialized legal work to make such a payments option consistent with State law and to ensure that the agreement meets IRS requirements for the tax-exempt interest payments and the securitization of the payments contract. While there are a number of Maryland counties who have implemented an installment purchase agreement payments option, State law poses particular issues not faced by local jurisdictions. $50,000 is requested for legal expenses to get the installment purchase agreement pilot project underway. It is estimated that each IPA costs approximately $5,000 in legal fees to set up an IPA to guarantee that it is tax advantaged and is capable of being securitized (sellable on the secondary market similar to a municipal bond). We plan to complete ten annually.

A successful pilot project using Conservation Corridor funding can be adapted to the overall MALPF program employing State property transfer taxes funding (State bond funds cannot be used for an installment purchase agreement payments option).

d. GIS development-ranking system

MALPF proposes to integrate statewide and county ranking systems into its database and its GIS mapping capabilities. $50,000 is requested to develop a pilot project to simplify the

calculation of prioritization scores for participants on Eastern Shore. Once districts whose easements are offered for sale have been identified and certain ranking characteristics have been specified, ranking of participating properties will be done by a customized computer program within GIS. Not only will this capability simplify the prioritization process, it will help identify the properties of most interest to the program and allow the staff to evaluate how well it is attracting the owners of such priority properties to participate in the program.

2. Rural Legacy Easement Purchase

The Rural Legacy Program was created by the Maryland General Assembly in 1998 as a land conservation tool to reverse the trend to convert agricultural and natural resource lands and open space to sprawl development. Funds are awarded to conserve land within designated Rural Legacy Areas. Rural Legacy Areas are selected based on a range of statutory criteria that includes the significance of resources and extent of resource-based industries to land use planning and level of funding match to support protection of the area. The Rural Legacy Program (RLP) is intended to protect natural resources, farms, forests, and other sensitive environmental areas through conservation easements. Its goal is to identify and protect areas that are rich in agricultural, natural, and cultural resources, which if protected, will help promote local resource based economics, protect greenbelts and greenways, promote the proper management of tillable and wooded areas, and maintain the fabric of rural life. It particularly focuses on creating large blocks of contiguous protected land. The program provides funds to local governments and land trusts to purchase easements and fee simple property

There are seven Rural Legacy Areas on the Eastern Shore. $5 million is available statewide in Maryland for 2004. Competitive ranking of projects statewide will take place over the next several months. State allocation will determine the actual amount of unmet need and match available for the Eastern Shore RLA. Additional match is available through funds allocated to Eastern Shore properties from the $3 million available in GreenPrint funding. We are requesting $15 million to apply to outstanding requests on the Delmarva peninsula in 2004.

a). Agricultural Security Corridor stretching across potions Caroline, Cecil, Dorchester, Kent, and Talbot Counties is 36,000 acres of which 12,500 has been protected. The 2004 request is $11.44 million.

This Rural Legacy Area (RLA) combines three focus areas, the Marshyhope, Sassafras, and Tuckahoe areas, into one large RLA. In 1994 the corridor concept was developed to focus local, regional, and national efforts on one of the largest, contiguous blocks of highly productive farmland in the rapidly developing mid-Atlantic. Safeguarding the agricultural economy of the Eastern Shore is the goal of the three Agricultural Security Corridor focus areas. Located north and south of Federalsburg, the Marshyhope area is defined by an important river corridor, prime farms soils, a concentration of stable farm support businesses and an extensive public investment in farm preservation easements. The Sassafras area includes the Sassafras Natural Resource Management Area of Bloomfield Farm. The area is contiguous to thousands of acres of donated easements and existing agricultural easements and districts. It is rich in natural resources and historic farm structures dating from the 18th Century. The Tuckahoe area is located west and south of Denton. All three focus areas serve as an anchor for agricultural production and investment, buffering and enhancing the region's natural, cultural, and open space priorities.

b). Chino Farms RLA consists of 6,880 Acres located in Queen Anne's County. To date over 5000 acres has been protected and funding was not requested in 2004.

The Chino Farms Rural Legacy Area will protect additional waterfront farms along the south shore of the Chester River East of Chestertown. Chino Farms has 2.5 miles of river frontage, a 90 acre lake managed as a sanctuary for Canada Geese and other waterfowl, and several areas containing Delmarva Bays, globally unique wetlands harboring a number of endangered species. Protection of this area will help improve the water quality of one of the most threatened watersheds in the state, preserve farms, woodlands, wetlands and wildlife habitat; and preserve one of the most scenic river landscapes in the Chesapeake Bay watershed. The 5,100 acre Chino Farms is the largest farm under single ownership in Queen Anne's County and one of the largest in the state.

c). Coastal Bays RLA consists of 16,200 acres in Worcester County. Over 7500 acres have been protected to date and $1.7 million is requested in 2004.

Falling within the Atlantic Coast Flyway, the Coastal Bays are part of the Environmental Protection Agency's National Estuary Program. Considered one of the most ecologically diverse in the state, the Coastal Bays Rural Legacy Area encompasses farms, forests, wetlands, and wildlife habitats. The plan would continue to build an east/west link between Pocomoke State Forest, the E. A. Vaughn Wildlife Management Area, and Assateague Island National Seashore, creating a 70,000 acre block of preserved land. It also overlaps with a forest legacy area. Protection will bolster the county's major industries of tourism, farming, forestry, and fishing.

d). Fair Hill RLA consists of 16,045 acres in Cecil County. Over 7500 acres have been protected to date and they are requesting $3.2 for purchase of easements in 2004.

The Fair Hill Rural Legacy Area is Cecil County's most productive and economically important agricultural region. Much of the Area is already under various forms of protection. By contrast, the area is also the most heavily traveled and rapidly developing due to its proximity to the I-95/Rt. 40 corridor. The goal is to improve water quality in the Big and Little Elk Creek watersheds and buffering and expanding the state-owned Fair Hill Natural Resource Management Area, a landscape indicative of Cecil County's rural and natural heritage.

e). Lands End RLA is 3,752 acres in Queen Anne's County. Over 1600 acres have been protected to date and $1.8 million is requested for 2004.

The Area contains Conquest Farm, which provides public access to the Corsica River, historic, agricultural/horticultural and environmental interpretation, other passive recreational uses, and protects wetlands and wildlife habitat. Significant amounts of shoreline along the Chester River is in the Area as well as prime waterfowl habitat and agricultural production.

f). Nanticoke RLA is 21,000 acres located in Dorchester County. Over 7600 acres have been protected to date and $2.6 million is requested for 2004.

The Nanticoke RLA is 21,000 acres located in the heart of the highly acclaimed Nanticoke watershed in Dorchester County. This Nanticoke watershed contains over one-third of all the State's wetlands and is one of the most pristine and ecologically significant watershed basins in the mid-Atlantic. A greenbelt of exemplary plant and wildlife habitat, prime farmland, and large blocks of working forests will be protected along 16 miles of shoreline of the Nanticoke River

and Marshyhope Creek. The RLA will also create growth boundaries around the rural village of Vienna. The Nanticoke RLA will link the Fishing Bay Wildlife Management Area, the USFWS Blackwater Refuge, the State of Delaware's Nanticoke Wildlife Area, and the existing Agriculture Security Corridor – Marshyhope RLA.

g). Quantico Creek is 13,637 acres located in Wicomico county. Almost 4000 acres have been protected to date and $2.23 million is requested in 2004.

The goals of the Area are to protect the rural character of the area and conserve its natural and cultural resources through preserving farms, forests, wetlands, water quality and wildlife habitat. This Area is recognized for its rural character, open lands, cultural significance, natural wildlife habitat and water quality impact on the Nanticoke Watershed. Protected land supports Wicomico County's resource-based economy, contributing to the tourism, outdoor recreation, fishing, agriculture and forest industries.

3. Forest Legacy Evaluation and Easement Purchase

Maryland identified three Forest Legacy Areas in 1995 comprising a total of 107,400 acres. To date 3 easements protecting 668 acres have been completed in the Elk Neck FLA, one easement in the Chincoteague Bay FLA for 97 acres is being processed and no easements have been completed in the Wye River FLA.

We propose to undertake a coordinated evaluation of Delmarva Peninsula to consider designation of new Forest Legacy Areas. The Delmarva Conservation Corridor offers jurisdictions the opportunity to coordinate efforts to protect blocks of valuable forest land across state boundaries. Maryland has developed a Strategic Forest Land Assessment using a geographic information system tool that rates both economic and ecological value of the resource. Maryland's and Delaware's Forest Service will work together with The Conservation Fund in a public/private partnership to coordinate and evaluate areas for designation in our year 2 proposal.

We project a demand in Maryland for $1 million annually to fund easement purchase in Forest Legacy Areas. We request $1 million in funding for purchase of easements in existing Forest Legacy Areas in Maryland in year 1. In years 2-5, we request $1million annually be earmarked for the Forest Legacy Areas in Maryland.

4. Programmatic modifications

The following programmatic adjustments are also requested as part of this proposal to better integrate federal easement programs funded as part of Maryland's Working Lands Initiative in the Delmarva Conservation Corridor with existing state and local easement programs:

- We request that easement contract language be modified to allow cooperative agreements between FPP and Conservation Corridor funding to allow match with state land preservation programs, particularly Rural Legacy.
- We request that the current 25% cap for donated portion be waived and the entire value of an individual's donated easement be accepted for match.
- We request that the donated portions of easements, local and state match be calculated on MD Eastern Shore for use as entire program match rather than on parcel by parcel basis.

- For easement purchases within the Delmarva Conservation Corridor we request the match requirement be reduced to 10%.

5. Wetlands Reserve Program

Maryland has prioritized wetlands protection since 1990, establishing a state regulatory program with the overall objective of no net loss. Although mitigation can address permitted losses, efforts have focused on enhancement and creation of new wetlands resulting in the creation or re-establishment of 6000 acres over the last 5 years. Under the Chesapeake Bay Program the state accepted a goal of creating 15,000 acres by 2010.

Approximately 16% of the land area of the Eastern Shore is wetlands. Historic loss of wetlands on Maryland's Eastern Shore is estimated at 45% . The CREP and WRP have been successful in providing incentives for the enhancement, restoration and creation of wetlands. Maryland is developing a separate CREP request to extend the program and it will continue to make wetland enhancement and restoration options available to interested landowners. This program is not competitive but requires landowners to have a cropping history. Although funding is competitive, WRP offers additional opportunities to landowners who may not have eligible cropping history or would like to protect wetlands under easement options. We project the demand for Maryland's Wetland Reserve Program funding to exceed present allocation. **We request an additional $300,000 for Wetland Reserve Program annually to address this gap.**

6. Conservation Security Program Demonstration

The concept of the Conservation Security Program is to reward farmers who have implemented BMPs and demonstrated natural resource stewardship through their own initiative. Delmarva jurisdictions also recognize that working landscapes provide a number of natural resource benefits to the public which are seldom recognized or rewarded. These include groundwater recharge, carbon sequestration, retention of wetlands and wildlife habitats and stream corridor management. Maryland has subcontracted a literature search for $85,000 to begin to quantify these intangibles that are not accounted for in typical cost:benefit analyses of natural landscapes. Our objective is to look at this and other opportunities to offer financial incentives for landowners who provide these public benefits by virtue of managing or protecting working and natural landscapes.

We will initiate a regional workshop to exchange information and ideas among agency staff, NGOs and private sector agricultural, forestry and natural resource professions and other stakeholders on the Delmarva Peninsula. This will include current research findings related to establishing cost/benefit for nontangible values provided by working lands and natural resource landscapes. We will then develop a process for establishing incentives to support and promote ongoing retention of these public benefits. One expected outcome is to develop one or multiple demonstrations of Conservation Security Program implementation for the Delmarva Conservation Corridor.

Concurrently, the Chesapeake Bay Foundation will be implementing a project funded by the Maryland Agro-Ecology Center to bring together farm policy and economic experts with stakeholders to determine opportunities for green payments and assess the needs and interests that should be addressed to shape the focus and practicality of green payment programs such as CSP.

These activities will be used to establish a regional approach for developing payment enhancements for applying BMPs that exceed minimum requirements, addressing local

conservation priorities in addition to treating conditions on the operation, participation in research or demonstration projects , cooperating with other producers to implement watershed or regional resource protection or conservation strategies, or carrying out assessment and evaluation activities related to BMP implementation strategies.

In addition to providing incentives for maintenance and expansion of tradition best management practices we will consider how valuation of the nontangible benefits can fit into the CSP or how other incentives such as tax benefits or market driven approaches could be developed to support these objectives. For example, Maryland law authorizes local jurisdictions to provide reduced taxation for agricultural land managed under a nutrient management plan and soil conservation and water quality plan. The addition of market forces and non-governmental funding increases strength and leverage to traditional government supported conservation programs. We will explore use of incentive payments for such things as groundwater recharge, carbon sequestration, retention of wetlands and wildlife habitats and stream corridor management . Regional demonstration of CSP will be a coordinated effort and funding will be requested for this component beginning in year 2 of the project.

7. Strengthen right to farm laws

The Maryland Conservation Corridor Steering Committee has identified right to farm laws as requiring strengthening to assure support of the long-term viability of agriculture on the Eastern Shore. Changing demographics have the potential to create greater conflicts if growth patterns begin to intercede and impact traditional and new working lands enterprises.

Maryland will conduct a literature search to collate background on existing local and state right to farm laws. These will be evaluated for adoption in Maryland. The Maryland Secretary of Agriculture will establish a committee to evaluate development of a legislative proposal to strengthen right to farm laws for Eastern Shore counties or statewide.

8. Land Conversion State tax increase

A long-term vehicle for resources is needed to fund purchase of development rights on working lands on the Eastern Shore. Currently funding for the MALPF is received through the land conversion tax paid for development of agricultural land. We propose to explore increasing the conversion tax rate in Eastern Shore counties as a regional vehicle to collect and spend resources on land protection programs. Consideration will be given to its use as incentive to direct growth into existing communities. Additionally the transfer tax currently caps the amount annually targeted to forest land protection. This will be re-evaluated for potential adjustments to support Delmarva Conservation Corridor goals.

Risk reduction & BMP implementation Strategies

1. Tree shelterbelts for Poultry houses- $65,000 (regionwide)

Nationwide animal feeding operations are under intense scrutiny for potential air emissions impacts to air and water quality. Preliminary research findings from the University of Delaware (Bud Malone) show that planting tree as vegetative buffers can reduce/mitigate particulate and ammonia emissions. More comprehensive monitoring results to quantify potential

reductions will be available in September, 2003. Additional benefits result from reduction of odors and "visual pollution" concerns of neighbors. This becomes increasingly important for many poultry-producing areas that face urban encroachment and a desire of the industry to co-exist with these residential neighbors. Approximately 65% of poultry houses currently use tunnel ventilation to maximize poultry productivity. Adoption of this practice may well exceed 80% over the next few years as the industry continues to rapidly adopt tunnel ventilation The industry should consider tree plantings around houses to improve energy efficiency and strengthen on-farm biosecurity.

Bud Malone is presently collaborating with a diverse group of scientist and extension specialist from Pennsylvania and Iowa in an effort to develop a national research initiative grant to refine the practice and better define its cost effectiveness and efficacy. Using Delmarva as model, the intended outcome would be to develop guidelines and educational materials that could be used nationally.

Initially AMA and now EQIP offers cost share for installation of vegetative buffers or tree shelterbelts around poultry houses. Widespread adoption of this practice will require a focused outreach and technical assistance effort. Accelerated adoption rates may require additional funding for installation cost share in future years.

Funds are requested to hire dedicated staff to work with poultry companies throughout the Delmarva region in the promotion, coordination and implementation of this program. This coordinator would work with the growers, nursery industry, and landscapers in the implementation of cost-effective, low maintenance plantings which require minimum involvement of the landowners. Staff will collaborate with poultry companies, design, write and assist in implementation of tree programs on poultry farms, coordinate with nurseries to assure availability of the materials, and improve cost efficiencies through bidding of labor and materials. Qualification include technical expertise in forestry or horticulture, experience working to promote and install tree buffers and knowledge of the poultry industry.

This is an annual funding request of $65,000 over five years of the project. We estimate an aggressive outreach program could result in 700 growers or approximately 30% of poultry growers participating in the program regionwide.

2. Crop insurance product: AGR product for diversified operations

Agricultural profit margins do not provide an adequate buffer against risk and impact the long term viability of many agricultural endeavors. There is a need to support the diversification of operations that will be supported through implementation of the economic development components proposed in the Delmarva Conservation Corridor.

As Delmarva farmers develop more diverse operations, crop insurance products need to be developed to address risk. Although diversification reduces overall risk to revenue, insurance products presently available emphasis single commodity production enterprises. Available AGR products provide only 72% coverage. The Delmarva Conservation Corridor project will increase opportunities for diversifying enterprises. These ventures may involve production of different varieties of grains, production of entirely new products or reformulation of products and by-products from the operation. In addition to costs associated with start up, there will be increased risks especially in the early stages of adopting new crops or agricultural production ventures. New insurance products will be necessary to address newly assumed risk We are requesting additional research be conducted by RMA using AMA funds to develop an enhanced adjusted

gross revenue product for whole farm coverage. Increasing coverage to 95% of revenue and improving return rates once the compensation trigger is reached are two areas that need to be addressed. We would propose, once FCIC approved, that the enhanced AGR be pilot in the Delmarva Conservation Corridor.

3. Small grain enhancement

Maryland has supported a fall cover crop program since 1994 to help tie up unutilized nitrogen during the fall and winter months. Research confirms that cereal grains planted as fall cover crops on Delmarva are capable of reducing nitrogen losses to ground and surface waters by as much as 25 pounds per acre per year. During two recent drought years, Maryland enhanced the cover crop program to allow harvest of small grains in the spring provided the crop did not receive fertilizer prior to March. Research has confirmed the risk of nutrient loss from fall fertilization and shown insignificant yield impacts from restricting fertilization to spring green up. Since income can be earned from harvest, reduced cost share is provided for planting cover crops eligible for harvest.

Although cover crops are one of the most cost effective nutrient reduction practices for all sources as identified by the Chesapeake Bay Program, there are several factors that have limited annual adoption of this practice. Since the traditional cover crop program does not provide an income source for the farmer, implementation takes less of a priority as fall tasks vie for limited labor. Additionally adherence to planting dates is critical for achievement of optimum nutrient reductions and planting delays due to the lower priority cover crops may receive or annual variations in weather have historically impacted the ability of producers to meet this practice specification.

Providing funds for a small grain enhancement as a part of a long term demonstration project pairs the nutrient uptake value of a cover crop with an income stream and increases the priority farmers will give to implementation of small grains in the fall. Additionally, the cost share reduces risk and provides an incentive to plant without fall fertilization and to gain experience with resultant yield performance. A secondary benefit is to promote planting of small grains such as hull-less barley and soft red winter wheat so farmers gain experience with these grains and can take advantage of potential markets established by value-added and energy projects proposed for the Delmarva Conservation Corridor. It will be part of the project to determine whether hull-less barley and soft red winter wheat planted without fertilization in the fall will meet plant quality requirements of these ventures. Currently proposed ventures-ethanol production and wheat straw to wallboard- are estimated to require 180,000 acres of small grains for raw product input. We request $ 2 million the first year to support 133,000 acres of small grains with the potential benefit of "tying up" 3.325 million pounds of nitrogen.

Resource Protection &Conservation Strategies

1. Irrigation

Maryland producers address risk from atypical rainfall years and improve the efficiency of nutrient utilization through use of irrigation systems. Adequate water supply during key periods of growth assure projected yield goals are met and efficient utilization of applied nutrients. Efficient irrigation systems linked to nutrient management plans protect water quality. Water conservation is an essential component of irrigation especially in low flow periods and reduces

impacts to stream base flow derived from groundwater. Conservation and efficiency are also important for long term resource maintenance and energy efficiency. Although the Delmarva peninsula is not traditionally considered a water deficit area, as more producers adopt irrigation to improve yield and nutrient utilization efficiencies, water conservation is a bigger consideration. We request $225,000 annually to provide 75% cost share or incentive payments for the following water conservation practices to increase efficiencies or irrigation systems:

- converting current irrigation system to low flow or drip irrigation
- installing buried main line to reduce leaks
- flow meters, tensiometers, backflow preventers
- management scheduling, soil moisture monitoring

2. Water management

Organized drainage systems to support agricultural production have been constructed since the late 18th century on Delmarva. These systems have made production agriculture viable on the wet soils and flat topography. Over 800 miles of public drainage systems have been established under state law. These Public Drainage Associations (PDAs) are independent subdivisions of the state with taxing authority to cover the expense of their maintaining.$206,266 in annual tax revenues from systems which are active and maintained in Caroline, Queen Anne, Somerset, Wicomico and Worcester counties will be used for match.

Since 1986 the Maryland Department of Agriculture has had regulatory authority to require and approve operation and maintenance plans that specifically address erosion control with an overall objective to protect water quality. State cost share is provided to promote the use of best management practices to assure water quality protection. In 2004, $24,000 in state funding is available and will go toward match.

There is often an inherent conflict between the intended use or effectiveness of drainage systems, which is to move water quickly and efficiently, and the natural functioning of a stream. Concerns about the impact drainage systems have as a direct conduit for nutrient movement to surface waters in addition to their historic wetland and habitat quality impacts have resulted in efforts to promote innovative BMPs to address these issues while maintaining original drainage functionality of these systems. Although PDA's, which are often channelized streams, cannot be fully restored, there are a number of innovative BMP's that can be used that allow continued drainage, but also improve water quality, enhance wildlife and provide other environmental benefits.

A Public Drainage Task Force was formed in 1999 to evaluate how to balance the need to maintain these drainage systems which provide drainage and stormwater treatment to support farming, community development, and transportation systems, while at the same time reducing nutrient export and sediment loads and providing shading and other habitats qualities for these channelized stream systems. Recommendations include implementation of progressive maintenance techniques and efforts that enhance the water quality benefits of drainage ditches consistent with Chesapeake Bay goals.

Funds have been secured through an EPA Section 319 grant the last three years to address severe storm damage and install a limited number of projects to reduce nutrient transport and

enhance habitat values. Monitoring of these projects to quantify their environmental benefits is included for one 2003 project.

Water control structures have a suite of benefits and have been utilized in Delaware for a number of years. They improve the ability of the producer to manage water. Their utilization can retain nutrients, support crop growth during drier periods, and provide wetland habitat during the winter months. "Pocket" wetlands have been created off drainage systems to slow water movement and increase residence time for treatment of nutrients. They also enhance habitat value. The prototype for a new technology-called a weed wiper- has been developed and used on some PDAs in Caroline county. It brushes the tops of woody vegetation with herbicide to allow access for maintenance. This technology selectively controls tall brush growth while maintaining low growth vegetation for bank stability, roughness and wildlife habitat. Traditionally, vegetation in the sensitive riparian buffer area along these systems has been mowed or herbicide spraying for total eradication of vegetation has been used annually.

PDAs are required by law to conduct walking inventories of the 800 miles of drainage systems every two years to identify structural, erosion and maintenance problems for treatment. MDA supports 2 FTEs to provide technical assistance to PDAs and has used these walking inventories to identify sites for utilization of innovative BMPs. This year's funding shortfall is estimated at $275,000. Funding would accelerate installation of water control structures, support wetland enhancement, provide an incentive for maintenance of in-field vegetative buffers and expand demonstration of the new management technology that promotes the retention of low growth vegetation on the slope areas of the PDA's.

3. Cover Crops Enhancement Program

Research confirms that cereal grains planted as fall cover crops on Delmarva are capable of reducing nitrogen losses to ground and surface waters by as much as 25 pounds per acre per year. Maryland has supported a fall cover crop program since 1994 to help tie up unutilized nitrogen during the fall and winter months. Funding in 2004 for cover crops statewide is $1.5 million.

As part of its Chesapeake Bay Program, watershed groups known as Tributary Teams are updating strategies for nutrient reduction to meet newly established goals. Since 1994, cover crops have been widely supported as an important agricultural practice and one of the most cost effective practices for nutrient reduction across all nutrient sources. An example of the potential nutrient reductions that can be achieved are highlighted by the Choptank Tributary Team who estimates that annual use of winter cover crops on 50% of the watershed's cropland (100,000 acres) could reduce nitrogen loads in the Choptank by over 1 million pounds per year, which is a little over 99 percent of the reduction needed to attain the established 2010 nutrient reduction goal in this watershed for nitrogen.

Implementation of winter cover crops is limited by funding availability-the cost for this level of implementation in the Choptank alone would require $2 million. Maryland is seeking mechanisms to promote and support the long term adoption of this practice. CSP and nutrient trading offer future opportunities.

In the short term, our objective is to provide additional incentives for producers that commit to utilization of cover crops in 3 out of 5 years and to provide new resources for cost sharing the actual implementation of cover crops so producers will gain experience and an increased comfort in its management requirements.

We request $4 million to support the planting of fall cover crops on the Eastern Shore. With current state resources this will allow over 250,000 acres to be planted annually with the potential to reduce nitrogen loads by over 6 million pounds. Adherence to planting dates is critical for achievement of optimum nutrient reductions. Annual variations in weather have historically impacted the ability of producers to meet this practice specification . We propose that $3.75 million be provided directly to MDA for administration through the Maryland Agricultural Water Quality Cost Share Program and $250,000 be provided through EQIP as a pilot to provide a $10 incentive payment to producers who agree to plant cover crops 3 years out of a 5 year contract.

4. Precision Agriculture

Adoption of precision agriculture technology holds great potential for improving the efficiency of commercial fertilizer use by a prescription approach to determining plant nutrient needs in accordance with site conditions. Increased efficiencies also support the profitability of farming enterprises while reducing losses of excess nutrients to the environment. Recent technological developments now provide growers with opportunities to adjust fertilizer application rates using variable rate technology (VRT). Utilization of this technology is responsive to regional concerns about nutrient management. One of the biggest hurdles in implementation of nutrient management requirements, is lack of data on yield histories. Where yield data does exist, it typically represents annual yield by crop by farm and does not reflect the variable productivity of different fields or soils. Using precision agriculture technology, farmers collect and store data on field and soil yield history electronically and are able to utilize remote sensing data to generate field-specific fertilizer application programs.

Limiting factors for utilization of this technology on the Delmarva peninsula include the time and resource intensive nature of initial data collection and sampling requirements . Additionally, field sizes are often not large enough to accommodate equipment use or to warrant the expense of equipment purchase. This proposal addresses both of these detractors to adoption.

a. Cost share/incentives for grid sampling and use of yield monitor

We request $250,000 funding to provide a $10 per acre incentive payment to farmers who make use of variable rate technology for application of nutrients. As part of this demonstration we would provide an incentive for 20,000 acres annually. The incentive will promote grid sampling and may also be put toward the rental cost for custom nutrient application. Additionally we propose to make funds available to cost share at 75% the purchase of yield monitors to be used to support this technology.

b. Linked Deposit Program for Equipment Purchase

Maryland presently uses a State Revolving Loan Program to provide reduced interest loans for the implementation of certain agricultural management strategies that address nonpoint source pollution. Soil conservation districts review applications and verify that loan requests support adoption of best management practices or strategies that support water quality improvement. We propose to expand eligibility of this program for the purchase on equipment used for precision agriculture. Justification is based on increased efficiencies for nutrient management.

c. Develop and Field Test Real-Time Nitrogen Sensors and Variable Rate Applicators for Corn and Wheat on Delmarva. (Project investigators: J.J. Meisinger, ARS; co-investigators: F.J. Coale, Univ. MD and T.J. Sims Univ. DE)

As farmers with poultry litter implement nutrient management plans, on a phosphorus or nitrogen basis, they are faced with uncertainties in litter composition, decomposition rates in the field, and uncertain nitrogen losses after application. Phosphorus based nutrient plans, in particular, will involve low applications and will require supplemental nitrogen fertilizer. Technologies that can improve the accuracy and timing of supplemental fertilizer in poultry litter systems can increase nitrogen efficiency by avoiding excess sidedress nitrogen use. We propose to develop and field test real time nitrogen sensors and variable rate applicators for corn and wheat on Delmarva.

Two fundamental principles for improving nitrogen (N) efficiency and reducing N losses to the Chesapeake Bay in grain crop systems are: I) to apply N at a rate consistent with crop need, and ii) to apply N in phase with crop demand.

New small-scale (2 ft x 2 ft) N sensors and associated variable-rate N applicators are available on a pilot scale which will allow real-time sensing of N stress with direct adjustment of supplemental fertilizer applications during a single pass over a production field. This technology offers the potential for adjusting the rate of N for the spatial variability of soil and manure N in the field (i.e. meeting principle one above) and for applying N during the growing season

A coordinated multi-state demonstration and research project will be conducted on at least 10 cooperating farms each year over 3 years across Delmarva to evaluate currently available real-time N-stress sensors coupled with variable rate N application equipment for corn and wheat crops. The evaluation will cover a range of soils and N sources, with special emphasis on manure systems because manure management strategies utilizing the P-index (low rates of manure) will necessitate use of supplemental fertilizer N to meet crop N needs. These tests will utilize field-strips to compare of the new technology with conventional N management systems and will include conventional soil sampling, real-time sensors with variable rate applications, yield monitoring, aerial photos, and an economic evaluation.

Budget: $1,000,000 over 5 yearsYear 1: $300,000 for equipment procurement and configuration of units.
Year 2-4: $200,000 each year for labor (1 FT person, 1 seasonal) and travel.
Year 5:$100,000 for labor, summary, and technology transfer of results.

5. Phragmites Control (WHIP)

Maryland presently implements a program to assist farmers in four counties on the Eastern Shore with the control of Phragmites. Phragmites is an invasive weed which out competes native vegetation. It has little food or habitat value for wildlife. Maryland Department of Natural Resources estimates that there are over 100,000 acres of Phragmites on the Eastern Shore representing 70% of acreage statewide

The Maryland Departments of Agriculture and Natural Resources provide a cooperative program to assist landowners/farmers with the control of Phragmites. The state program supplies the chemical products necessary to kill Phragmites and charges the farmer/landowner an hourly rate for aerial or ground application to eradicate Phragmites. In 2002, 750 acres of Phragmites were treated under this program on public and private land. Control costs ranged from $80 per

acre for aerial control to $200 per acre for ground treatment. Demand currently exceeds available funding and the program is only available in Caroline, Dorchester, Talbot and Worcester counties.

Phragmites control is currently cost shared under the Wildlife Habitat Incentive Program (WHIP) in Delaware. Maryland requests $100,000 in funding to control 1100 acres of Phragmites. The program will be administered as a demonstration of a public/private partnership and would be available in all nine counties on the Delmarva. Applications will be ranked and prioritized for funding based on NRCS habitat value index. We are requesting an additional $10,000 through a contributory agreement for state administration of the program.

6. Technical Assistance

The authorizing legislation for the Delmarva Conservation Corridor program includes adequate staffing as an objective. The suite of programs being proposed by Maryland will require additional staff resources at the local level to assure delivery of programs is achieved without impacting current technical services provided through local soil conservation and state forestry staff. Both Maryland's experience implementing the Conservation Reserve Enhancement Program without new staff resources and an annual workload analysis indicate gaps will exist in program delivery if additional staff resources are not available. Delivery and technical support to existing programs will be impacted without additional staff resources.

We propose to execute contributory agreements with NRCS under the technical service provider component of the Farm Bill and provide a 50% match ($720,000 in staff services).

We are requesting 16 positions to work through local soil conservation districts to provide technical assistance for the development of soil conservation and water quality plans and implementation of conservation measures outlined in this proposal. Staff will support annual implementation of cover crop and small grains on 233,000 acres, design and implementation of innovative water management practices, implementation of systems to enhance water conservation and efficiency of irrigation, implementation of precision agriculture incentives and review and approval of linked deposit loan program requests for precision agriculture equipment, development and implementation of soil conservation and water quality plans on approximately 50,000-80,000 acres of agricultural land protected under MALPF (over the five year DCC program) as required by state law, and support implementation of tree shelterbelts around poultry houses. It is estimated that staff will annually complete 250 soil conservation and water quality plans on approximately 44,000 acres and provide technical assistance for the installation of 540 BMPs.

We request $120,000 to support 2FTE foresters to provide technical assistance to increase reforestation by 500 acres, provide technical assistance for approximately 2500 acres of Timber Stand Improvement. Additionally staff will support implementation of riparian forest buffers under CREP and forestry practices under EQIP and FLEP including afforestation, reforestation, site preparation and thinning .

Infrastructure Support Strategies for Working Lands

1. Wastewater System Upgrades for Rural Communities

Upgrades to wastewater treatment systems are critical to help the municipal governments of the Eastern Shore grow and prosper, while at the same time ensuring the maximum protection of water quality. Improvement of wastewater systems also complements land protection strategies by supporting development in existing communities. The Eastern Shore depends heavily on a clean environment for its economic health.

Necessary upgrades to wastewater treatment plants on Delmarva continue to present a significant financial challenge to rural communities. In 2003 the principals in the Chesapeake Bay Program agreed to achieve a 35% reduction in nutrients discharged from WWTPs in Maryland.

For purposes of this request we have prioritized wastewater treatment plants (WWTPs) with a design capacity of 500,000 gallons per day or more. Reducing nutrient discharge from WWTPs of this size is targeted by the Chesapeake Bay Program for achieving local and regional water quality goals.

There are 19 wastewater treatment plants (WWTPs) on the Shore draining to the Chesapeake Bay with a design capacity of 500,000 gallons per day or more. Out of 19, six (6) currently operate with BNR (Cambridge, Denton, Easton, Fruitland, Princess Anne and Perryville), and two (2), Centreville and Northeast, are in construction. The remaining 11 plants are planning to implement Biological Nutrient Removal, to reach an effluent concentration goal of 8 milligrams per liter (mg/l), instead of 18 mg/l, typical of secondary wastewater effluent. MDE has been fast-tracking implementation of BNR on the Eastern Shore since 1998 in response to a Pfiesteria outbreak and to address implementation of TMDLs and achievement of the Chesapeake Bay program nutrient reduction goals.

To further protect water quality and to avoid the implementation of a Bay-wide Total Maximum Daily Load for the mainstem of the Chesapeake Bay, Maryland is encouraging these wastewater plants to plan, design and construct additional nutrient removal facilities (ENR) to reach a goal of 3 mg/l nitrogen. The implementation of the state of the art nitrogen removal will also assist local governments affected by nutrient limits resulting from the establishment of localized Total Maximum Daily Loads to meet permit requirements, and allow some room for growth. Out of 19 plants, one has been upgraded to meet a TN limit of 3 mg/l as required by the EPA approved local TMDL. The remaining 18 WWTPs are targeted to implement Enhanced Nutrient Removal (ENR), and ultimately achieve a goal of 3 mg/l total nitrogen.

Based on the readiness to proceed, eight (8) WWTPs currently in design (Crisfield, Hurlock, Delmar, Federalsburg, Salisbury, Snow Hill, Chestertown and Kent Island) will be able to proceed with construction of BNR/ENR upgrades. The state BNR Program provides 50% cost-share funds for the eligible BNR cost. The ENR Program is proposed to follow this successful formula.

To date, the State authorized over $38 million for the Eastern Shore WWTPs, leaving a balance of about $42 million, $13 million for BNR and $29 million for the ENR upgrades. The total local/federal(EPA) share of the BNR/ENR Programs is estimated at $80 million. The State has provided $3.8 million in Supplemental Assistance Funds to help small, low-income communities to offset local share of the BNR upgrade cost. Through Special Appropriations, Eastern Shore plants received a total of $18.7 million in federal funds. Local governments have contributed over $8 million in local funds for the upgrade of the facilities currently in operation

and construction, for a total of $30.5 million from all sources. The remaining funding needs to complete BNR upgrades and implement ENR are estimated at $49.5 million, with $20.5 million to complete BNR and an additional $29 million to implement ENR. In summary, the Total projected 5-year funding needs are as follows:

Total BNR Cost ($million)	Total ENR Estimate ($million)	Total Cost of (BNR/ENR) ($million)	Total State/Federal/Local Authorized to date ($million)	Total State/Federal/Local Need ($million)	Total FFY 03 Need ($million)	Total Nitrogen Load Reduction (mlbs/yr)
$102	$58	$160	$68.5	$91.5	$23	1.66

Additional federal assistance of $23 million will support these needs and help ensure that the Delmarva Peninsula will be developed in a manner that will preserve the ecological integrity of this unique area, while providing the essential infrastructure needed to accommodate appropriate growth and economic development. BNR/ENR upgrades of 19 WWTPs will reduce nitrogen loads to the Bay and local watersheds by an additional 1.66 million pounds per year, provide local jobs and benefit economic growth.

2. Financial Support Pool for Rural Development

The long-term economic viability of Delmarva's working lands is an essential component of the Delmarva Conservation Corridor. There is a need to diversify production through alternative crops and attract and market to new businesses. Launching a value added enterprise requires financing for market research, feasibility studies, business formation, accounting formation and equity drive. Additional incentives in the form of subsidized interest can assist farmers to buy into value added start ups. Creation of value added products or energy generation from grains offer promising opportunities to area farmers who have knowledge, experience and existing equipment investments to grow them.

There are several efforts underway that could initiate business ventures to address this need. We propose that $5 million in Rural Development grant and loan funding be annually earmarked to support product and market research and start up for value added ventures, establishment of cooperatives to gain market share or efficiencies, market research into alternative crops, introduction of innovations to diversify the agricultural and forestry sectors and small grants, no or low interest loans for agricultural producers.

We propose to demonstrate how a pool of resources earmarked for use through existing programs including Rural Business Enterprise Grants, Rural Business Opportunity Grants, Intermediary Re-lending Program Loans, Rural Economic Development Loans and Grants, Rural Cooperative Development Grants, and Value-Added Agricultural Product Market Development Grant Program can provide the flexibility and seed money necessary to create a catalyst effect to jump start a renaissance of economic development on the Delmarva Peninsula.

The funding request is based on costs for similar value added ventures and business start ups recently initiated on the Delmarva Peninsula. Chesapeake Fields Institute (CFI) has perhaps

come the farthest in establishing a value added venture. CFI is a collaboration of area family farmers, community, government, business leaders, and institutions of higher education throughout the Delmarva Peninsula plans to develop community-based food systems enterprises that are locally-owned and operated using environmentally sound practices. They estimate expenditures to date of over $500,000 to conduct crop variety research, feasibility studies and market research. CFI's initial for-profit ventures will be oil seed cleaning and crushing, oil seed snack foods and an artisan bakery to anchor its planned $10 million agriculture business park.

Some examples of the types of activities we have targeted for support include:

- Business start up incentives such as subsidized loans or subsidized interest on commercial loans.
- Development of cooperatives of landowners with small forest acreage holdings so they can pool labor and assets for management, marketing and establishment of secondary or value-added industries for wood products.
- Development of a revolving loan program that would allow farmers to borrow money at below market interest rates for new technologies, equipment, or start up costs for new ventures
-Increased flexibility to provide financial assistance for farm ownership and farm operating loans to new or limited resource farmers through programs such as the Direct Farmer Program.
- Grants to support value added product and market research.
-Subsidized interest to allow farmers to buy into value added start ups.
-Grants and no interest loans to farmers as seed money to initiate new products, alternative crops or other enterprises or technologies to diversify and improve their operations

At present several ventures are ready to proceed and we request funding associated with these specific projects to initiate the pilot as part of the $5 million requested in the first year. We will work with USDA Rural Development for approving and prioritizing projects for funding.

a. Soyflour Processing Plant:

We request $60,000 in grant funds to study the feasibility of developing a soyflour value added production facility in the Delmarva Conservation Corridor. The long-term viability of agriculture depends on marketing products at a profit. Marketing commodity grains is one of the least profitable enterprises in agriculture. Although the production of corn and soybeans is important for the viability of the poultry industry, it is also important to supplement farm income through value added investment opportunities. Following a successful feasibility study which would determine the size of the plant, engineering costs and environmental analysis would need to be conducted.

The construction of a soyflour plant to process soybeans from 50,000 acres would require approximately a $1.25 million investment in the facility. Heartland Fields has successfully developed a technology to develop soyflour. The funding for the marketing, research and development to date has come from various sources including $1.02 million from Maryland farmers. This study would determine the feasibility of locating a plant within the Delmarva Conservation Corridor as an economically viable value added venture for Delmarva farmers.

b. Wheat Straw to Wallboard-feasibility study:

We request $40,000 to conduct a feasibility study for processing wheat straw to wallboard. Affordable Business Systems (ABS) is a Texas based company that has developed a

method to make wheat straw into a "green" building material. It has many applications including the replacement of traditional 2"x 4" walls, insulate ceilings and office dividers. Texas Wheat Board is involved in the Texas project and has expressed an interest in bringing the product to the Washington DC area as there is a lot of interest in purchasing "green" building materials locally.

This industry would also support the soft red winter wheat market on the Delmarva peninsula and provide a market based impetus for planting winter wheat. It is estimated that this market outlet would support 30,000 acres of soft red wheat. The proposed small grain enhancement program may provide the perfect "fit" since growth is not for nutritive value but for fiber and fall nutrient application may be less of an issue.

The cost to ship the wallboard beyond 500 miles becomes cost prohibitive for ABS . This proposal will determine if the Affordable Building Systems model can become a viable value-added enterprise for farmers in the Delmarva Conservation Corridor. If economically viable the construction cost for the plant would be $4 million.

c. On Farm Grain Storage- grant program

Grain farmers on Delmarva use complex marketing strategies to recapture the value of their crop such as forward contracting portions of their production or using other methods to lock in prices so they can avoid selling at harvest when supply may suppress prices. Additional regional factors which have increased the risk in grain production include the reduction of available grain storage facilities and loss of the shipping support facilities that allowed delivery and transport through the Port of Baltimore. On farm storage facilities increase marketing flexibility and reduce risk

Small grain storage facilities on individual farms will facilitate the ability of farmers to add value from "identity preserved or IP" grain market. This guarantees origin of the grain and supports a niche market CFI plans to respond to-addressing consumer concerns over potential effects of biotechnology and other production methods on human health. After conducting crop variety research, feasibility studies and market research, CFI's initial for-profit ventures will be oil seed cleaning and crushing, oil seed snack foods and an artisan bakery to anchor its agriculture business park. All grains used will be identity preserved (IP) which is thought to be one key to CFI's future success. IP means growers will plant, harvest and process crops keeping them segregated at all times; all inputs will be recorded and printed on the CFI label that will accompany the product to the consumer/customer. It is anticipated that on farm storage would be necessitated to assure identity preserved products and improve marketing flexibility**.**

We request $175,000 to be disbursed in a grant program cost sharing 87.5 % of the cost of small (10,000 bushels or less) on-farm grain storage facilities. Funding will support approximately 20 storage facilities, with a total capacity for 200,000 bushels of IP grain.

3. Regional Rural Enterprise/Rural Development Specialist

We request $ 170,000 to support 2FTEs to work under the auspices of Maryland Cooperative Extension to provide one-on-one consultation to agricultural producers, assisting them to develop enterprise budgets and general farm budgets, while encouraging them to develop wills and estate plans. They will also be responsible for developing educational programs within

the region to educate agricultural producers and forest landowners about various aspects of financial management, marketing and the range of enterprises available to sustain their farming operation. Educational efforts will also focus on citizens, decision makers, and agricultural producers to provide them information regarding the benefits of the growth of sustainable and profitable working lands as well as accompanying industry and how this may help to resolve many social issues that impact all the citizens of Maryland.

This staff will work as part of a team, consisting of representatives from MDA, MCE, county/regional economic development specialists, and local land conservancy leaders, to address critical land use issues in rural areas by enhancing, building and diversifying agriculture and natural resource marketing opportunities in the corridor. To specifically plan implement, and evaluate existing operations and potential operations that address profitability in local production while adhering to existing land use policies and provide opportunities for traditional as well as alternative agricultural enterprises. They will also organized local roundtable discussion groups with local decision makers, economic development specialists and farm organizations to discuss opportunities and challenges for local agricultural producers.

4.Barley-Based Ethanol Plant:

Funding to support the construction of a barley to ethanol plant in the Delmarva Conservation Corridor. Funding request is $12,000,000. A Maryland group has been looking into the feasibility of building a barley to ethanol plant on the Delmarva Peninsula. Barley was selected as this area is corn deficit and to improve water quality by expanding the acreage of winter cover crops.

The energy density of barley is lower than corn and as a result, a barley to ethanol plant will only produce 2.0 gallons of ethanol per bushel compared to 2.8 gallons per bushel of corn. An added downside is that the resulting dried distillers grains with solubles (DDGS) has a higher fiber and lower nutritional value which is not compensated by the increased volume. The plant cost to produce 15 million gallons of ethanol per year is also increased because of the reduced throughput. In the long term, hull-less barley shows promise as providing a valuable higher density feedstock that will provide 2.5 gallons per bushel and produce a DDGS of similar value to corn. Hull-less barley maintains the environmental benefits of expanding the production of a winter cover crop. It is estimated that ethanol production would require 150,000 acres of hull-less barley potentially reducing nitrogen losses by 3.75 million pounds.

These funds will enable a barley to ethanol plant to be constructed in the region using hulled barley as the feedstock with design parameters to move to hull-less barley as the feedstock as the new product becomes commercially available. (The first commercial variety of hull-less barley will be released fall 2003 and as the seed stock will be multiplied providing adequate quantities of the feedstock in 2006-2007.) Investors and borrowed capital would be sought in this value added enterprise to raise the remaining $19 million required to build the plant. It is anticipated that construction would begin within one year of raising all the funds.

Maryland Grain Producers Utility Board has funded a feasibility study that cost $40,000. They are now working on a more refined feasibility study and business plan with a cost estimate of $310,000. Funds have been raised from several private sources as well as a Maryland

Department of Business and Economic Development ($125,000) and a USDA rural development grant ($50,000).

5. Maryland Working Lands Foundation

The proposed Maryland Working Lands Foundation will be established to serve farmers with information and technical support for maintaining agricultural profitability. The MWLF will become a first stop for farmers and working lands business ventures who are seeking support for new agricultural, forestry or natural resource based initiatives. It will improve coordination of economic development throughout the Delmarva Conservation Corridor. This entity would assist and help find financial support for farmers and foresters interested in pursuing new business ventures, develop value added enterprises, alternative crops, and assist with the formation of agricultural and natural resource based cooperatives

The Foundation will also conduct fundraising to provide additional sources for ongoing support for the Maryland's Working Lands Initiative over the long-term. We believe this is essential to the success of the DCC as non-governmental funding will increase the strength of the project and can leverage government supported resource conservation and rural development programs.

We envision that the MWLF will collaborate with regional development councils, local governments, and the Eastern Shore Resource Conservation and Development Councils to integrate local agricultural economic development and provide structure for comprehensive agricultural economic development planning in the Delmarva Conservation Corridor**.**

Jurisdictions may utilize MWLF as a clearinghouse for information and technology transfer and to provide regional training, workshops, seminars, or conferences on financial or business planning. They will also provide financial audits and business counseling for managers of enterprises supporting or managing working lands enterprises.

6. Delmarva Conservation Corridor Committee (regionwide)

Delaware, Maryland and Virginia parties to this proposal will establish a "Delmarva Conservation Corridor Committee which will meet as needed but at least annually to monitor progress of the Demonstration Program. The purpose will be to evaluate and coordinate activities, develop proposals for future years and develop information and outreach materials about the project. The committee will evaluate the program to assure objectives including voluntary participation, protection of land of high conservation value, no effect on unenrolled land, adequate staffing and benefits from the synergies and complementary impacts of programs are being met..

The Committee will also plan and sponsor an annual workshop open to the public to review and evaluate progress, foster a dialog among jurisdictions, different sectors and different stakeholders, and promote public participation, collaboration and partnership.

V. Budget Summary

project	yr 1 request	match
MALPF staff GIS Installment Purchase Adm.	$50,000,000 65,000 50,000 50,000	**$8,000,000 (estimate, actual based on easement purchase on Delmarva)**
Rural Legacy	$15,000,000	$1.5 million (estimate, actual based on easement purchase on Delmarva)
Forest Legacy	$ 1,000,000	$1 million (estimate, actual based on GreenPrint expenditures on Delmarva)
WRP	$ 300,000	as above (estimate, actual GreenPrint expenditures on Delmarva)
Conservation Security Program	0	✔in kind staffing
Right to Farm	0	✔in kind
Tree Shelterbelts-poultry houses	65,000	$400,000 (State & private funding for Manure Transport Program)
Crop Insurance AGR-R&D Enhanced coverage pilot	R&D costs=undetermined	

Small grains enhancement	$2,000,000	$1,800,000 (estimated based on 2002 MACS capital expenditures on Delmarva)
Irrigation conservation	$ 225,000	
Water Management-innovative BMPs	$ 275,000	$336,500
Cover Crops	$4,000,000	$1,050,000 (estimate based on MACS expenditures on cover crops on Delmarva)
Precision Ag-Incentives	$ 250,000	
Precision Ag-Linked Deposit	0	✔Based on activity
Nitrogen Sensors and Variable Rate Applicators	$ 300,000	$300,000 (MACS support nutrient mgt plan on Delmarva)
Phragmites Control	$ 110,000	$80,000
Technical Assistance-TSP	$ 720,000	$720,000
BNR/ENR	$23,000,000	$68,500,000
Financial Support Pool for DCC Rural Development Soyflour ($60,000) Wheat straw to wallboard ($40,000) On Farm Grain storage ($175,000)	$ 5,000,000	✔ match amount = cost share, loan interest, in kind, etc related to specific activities, funding sources and funding instruments

Ethanol	$12,000,000	$19,000,000
Regional Rural Enterprise/Rural Development Specialist	$ 170,000	$ 50,000(salaries)
Delmarva Working Lands Foundation	0	✔in kind
Delmarva Conservation Corridor Committee/ I&E, Workshop	0	✔in kind
TOTAL	$114,580,000	$98,136,500 (does not include private funds invested in cost share, loan activity, in kind salaries or operating)

VI. Appendices

Steering Committee

Maps:

Maryland Protected Lands
Maryland Rural Legacy Areas

Steering Committee
Maryland Working Lands Initiative:
A Delmarva Conservation Corridor Project

Royden N. Powell, Assistant Secretary,	Maryland Department of Agriculture (Chair)
David Doss, State Conservationist,	USDA- Natural Resources Conservation Service
Steve Connelly, Director	Maryland Farm Services Agency
Marlene Elliott, State Director	Rural Development-USDA
Robert Wilson, President	Maryland Association Soil Conservation Districts
Robert Tjaden, Associate Director	Maryland Cooperative Extension
Steve Koehn, State Forester	Forest Service, MD Department of Natural Resources
Harry Moreland,III, Vice-President	Maryland Farm Bureau
Kenneth Bounds,Vice President, Chief Business Development Office	Mid-Atlantic Credit, ACA
Rob Etgen, Director	Eastern Shore Land Conservancy
Hank Passi, Chairman	Maryland Agricultural Commission
Phyllis Kilby, Cecil County Board of Commissioners representing	Maryland Association of Counties
Steve McHenry, Director	Forvm for Rural Maryland
Al Girard	Chesapeake Bay Foundation
Lynne Hoot, Executive Director	Maryland Grain Producers
Louise Lawrence, Executive Secretary	State Soil Conservation Committee
Jim Mallow	Forestry Industry